

UNIT 4

OWNERSHIP, CONTROL AND ORGANISATION OF NATURAL RESOURCES

Critical issues about land in Africa

- ◆ **What is land?**
- ◆ Land is one of the major factors of production including all natural resources used in the production process.
- ◆ Land includes forests, water resources, mineral deposits, oil reserves and even resources of the sea
- ◆ It also includes such natural phenomena as access to sunlight, rain, wind and changing temperatures and location with respect to markets and other areas
- ◆ Land is regarded as a gift of nature and its value tends, in the long run to depend on the intensiveness of its usage

Cont'd

- ◆ **Land Degradation in Africa:**
- ◆ The presence of gullies and sand dunes, of degraded forests and grazing lands are clear indications.
- ◆ The wealth of Africa depends on her ability to conserve and manage her resource.
- ◆ Apart from decreased food production, soil degradation can also result in droughts, ecological imbalance and consequent degradation of the quality of life

Cont'd

- ◆ In Africa, the most obvious symptom of land degradation on food production is the increased poverty levels and declining yields.
- ◆ Another symptom of land degradation is the unpredictability of rains, regardless of the climatic zones.
- ◆ The continent can be divided into four climatic zones:
 - ➔ The humid zone
 - ➔ The sub-humid zone
 - ➔ The semi-arid zone
 - ➔ The arid and desert zone

Cont'd

- ◆ **Africa's soil:**
- ◆ Africa also suffers from geologically induced and inherently low soil fertility.
- ◆ Our bedrocks consists mostly granites and gneiss (a kind of metamorphic rock).
- ◆ African rocks are among the oldest in the world.
- ◆ The relationship between the parent soils and the soil forming factors are very complex because the land surface has undergone series of vegetation and climate

Cont'd

- ◆ Nearly one-third of central plateau of Africa is of pre-cambrian age (over 600 years old).
- ◆ The rest of the surface is covered with sand and alluvial deposits of Pleistocene age (less than 2 million years old)
- ◆ For this reason most of our soil are characterized by a low proportion of clay making it easier to work with but also easy to lose

Cont'd

- ◆ Besides the harsh weather conditions Africa battles with, large part of the continent has been occupied by human beings much more than in other continent.
- ◆ Human activities in obtaining food, cloth and shelter has significantly altered the soil.
- ◆ Therefore, land degradation in Africa is mostly caused by humans, hence its pace is increased by the speed at which the population size increases.
- ◆ Though land degradation is mostly man-made, irregular natural events such as droughts, worsens the situation.

Cont'd

- ◆ Most African countries have already lost significant quantity of their soil to various forms of degradation
- ◆ Serious erosion areas in the continent can be found in sierra Leone, Guinea, Ghana, Nigeria, Liberia, Ethiopia, Senegal etc.
- ◆ Nomadic herders, grazing animals on arid and semi arid lands are particularly vulnerable to drought, since it depletes their livestock.

Cont'd

- ◆ **Desertification and deforestation in Africa:**
- ◆ It has been estimated that 319 million hectares of Africa are vulnerable to desertification hazards due to sand movement.
- ◆ An FAO/UNEP assessment of land degradation in Africa suggest that large areas of countries in the north of the equator suffer from serious desertification problems.
- ◆ Example the desert is said to be moving at an annual rate of 5 km in the semi-arid areas of west Africa.

Cont'd

- ◆ Archaeological records indicates that Africa's arid areas have been getting drier progressively over 5000 years.
- ◆ What is new is the incidence of drought with increasing pressure put on fragile arid and semi-arid by mounting numbers of people and livestock.
- ◆ In the wetter areas however, there is a better chance that degradation can be halted and the land restored

Cont'd

- ◆ Soil degradation caused by deforestation is also a serious threat in Africa.
- ◆ It exposes the soil to high temperatures which break down the organic matter, increases evaporation and make the soils vulnerable to erosion.
- ◆ To sum up we realize that erosion, desertification, deforestation, and poor agricultural practices in the bane of our soil fertility in Africa.

Cont'd

- ◆ Despite the great potential in Africa for irrigation estimated by FAO to be about 27 million hectares, only one-sixth has so far been developed.
- ◆ The future need not echo the past. Most African countries have a number of options that if applied wisely could boost agricultural production and slow down land and environmental degradation.

Cont'd

- ◆ Though these options could be possible over the next 35 years, just less than a generation, it is however an important assumption that technical changes of these nature cannot and will not be implemented unless far reaching policies are introduced by African governments themselves, especially through a genuine democratization process.
- ◆ The main technical options opened to Africa are:
 - Land and optimal irrigation development or water policy in general;
 - Increasing land and labour productivity with available technology

Cont'd

- Developing additional technology to overcome production constraints that currently have no technical solutions; and
 - Institutional framework including land tenure policy, desertification of rural communities' income.
- ◆ These options are closely related and must be put into their proper perspective since misleading claims have been made for them.

Cont'd

- ◆ The traditional responses to soil degradation vary from one ecological zone to another.
- ◆ In the humid zone, traditional agricultural practices ensure that soil degradation is kept to a minimum.
- ◆ The mixed crop canopy protects the soil from physical destruction and keeps organic matter up.
- ◆ These systems are maintained by:
 - Forest or bush fallowing techniques
 - Retaining useful trees
 - Inter-cropping
 - Use of household fertilizers etc.

Cont'd

- ◆ It should however be pointed out that, not all the traditional practices have had favourable impact on the soil situation in the continent.
- ◆ A number of them like bush burning, cutting down trees for firewood etc have encouraged soil degradation.
- ◆ The impact of droughts in Africa is to be seen in a global context, and measures must be put in place to curb its incidence on our continent.

Land Mgt in Ghana

- ◆ **Rationale for land mgt in Ghana:**
- ◆ The need for efficient mgt of land is necessary in the wake of rapid population increase.
- ◆ There is also a growing demand in all activities based on the land.
- ◆ The traditional indigenous system hold land in trust for the use and welfare of the community.
- ◆ The state also seek ways to use land and its resources to improve the well being of its people.

Cont'd

- ◆ The issue of land mgt is recognized as a central point in in any effort to address environmental and resource problems in Ghana.
- ◆ This is obvious as over the years, considerable efforts have been made to streamline the inter-locking facets of land mgt in the country.
- ◆ A major attempt of this is the work of The Land Use Planning Committee set up in 1987 to draw land use plans for the country.
- ◆ Another great stride is the current project on stool lands through out the country

Cont'd

- ◆ **Land characteristics:**
- ◆ The characteristic of a land is an attribute of the land, which can be measured or estimated.
- ◆ It essential to estimate such attributes as size, slope, and slope characteristics, soil depth, and texture, water holding capacity, climate, rate of erodability etc.
- ◆ These characteristics help us to classify some lands as suitable for pasture, forestry, estate development or for agricultural activities.

Cont'd

- ◆ Statistics indicate that welfare of lands have not increased in Africa since 1970, despite the fact that the economy on the whole has prospered:
- ◆ While consumption is steadily increasing, the welfare keeps on declining on the other hand.
- ◆ The reason why society cannot interpret the data of decline is in three folds:
 - ➔ The main information flow on a nation's state of affairs is in the statistics of the national accounts or the national or domestic products (GDP)
 - ➔ Second, natural resources are still considered as a free good, to be consumed and depleted freely.

Cont'd

- Thirdly, the relationship b/n environmental losses and general welfare loss is not understood
- ◆ A number basic principles have been established which provide guidelines for action.
- ◆ They are outlined in the world soil charter (FAO, 1982) and ought to be the basis for control and reversal of land degradation
- ◆ The world soil Charter recommends the ff:
 - Developing a policy for wise land use according to land suitability for different types of utilization and needs of the country

Cont'd

- ➔ Incorporating the principle of rational land use into appropriate resource legislation.
- ➔ Developing an institutional framework for monitoring, supervising and coordinating the conservation of the country's land resources.
- ➔ Assessing all lands of their suitability for different purposes and the likely hazards of degradation.
- ➔ Implementing education, training and extension programmes at all levels in soil management and conservation

Cont'd

- ➔ Disseminating as widely as possible knowledge on the subject of soil degradation and how it can be prevented.
- ➔ Establishing link b/n administrators and land users for the implementation of soil policies
- ➔ Striving to create socio-economic and institutional conditions favorable to rational land resource management and conservation.
- ➔ Conducting research programmes which will provide practical solutions to soil degradation problems but give due consideration to prevailing socio-economic conditions.

Cont'd

- ◆ Based on these guidelines, African government ought to consider the ff for immediate action:
- ◆ Conservation should be seen as integral part of farming systems and the general extension worker should be the one to provide the necessary technical advice.
- ◆ The extension worker needs adequate training to recognize problems requiring expert advice

Cont'd

- ◆ Africa will continue to need the valuable technical and financial assistance of both bilateral and multilateral donors
- ◆ The development of a conservation programme should be seen as a long term activity.

Ownership and control of natural resources

- ◆ **Regimes of resource ownership:**
- ◆ Regime in this context refers to social and political structures or frameworks within which people manage their resources.
- ◆ These **frameworks** relates to right of access to the resources and the powers to exclude others; to the right of withdrawal or taking of resources; to the right to manage the resource in a physical and technical and sense, and to sell or dispose of the resource

Cont'd

- ◆ We must note however that the right of an individual or a group to use or manage resource may be limited or regulated by the state.
- ◆ Ownership and control systems may range from **laissez faire** at one end to **centrally planned** or **socialism** at the other end.
- ◆ These control systems may develop **spontaneously**;
- ◆ Or be **negotiated** by the parties with interest in the resource;
- ◆ Or may be **imposed** by external authority

Cont'd

- ◆ Ownership and control systems are dynamic rather than static.
- ◆ Major changes have occurred in the ownership and control of environmental resources.

Cont'd

- ◆ **Types of resource regimes:**
- ◆ Two main type can be distinguished:
 - one involves definitions of those individuals with right of access to the resource
 - And the other relates to limitations on extraction rates or the level of use of resources by those holding the right to access.
- ◆ Three main property regimes have been identified:
 - Private
 - State and
 - Common property regimes

Resource regimes

	Private ownership	Common ownership	Open access
Access or right to extract resource	Owner/occupiers	Group members	Anyone
Limitation on level of extraction by those holding the right to access	Owner's decision	Group rules	Unlimited

Cont'd

- ◆ **Open resources:**
- ◆ Many resources are used initially on an open access basis.
- ◆ Under open access individuals and groups take whatever resources they seek from a particular environment.
- ◆ No organized regulation of their activities is imposed, and no mechanism exist for allocating products.

Cont'd

- ◆ Although some open access regimes may have certain limitations on users, more typically, this type of regime is associated with completely open access and unlimited extraction.
- ◆ The 'owners' are simply the custodians of the part of the world that 'belongs' to them.
- ◆ Open access regime can be probably sustained if the pressure on the resource use is modest, but as soon as the pressure increases as a result of increasing population, various problems emerges.

Cont'd

- ◆ **Common-property resources:**
- ◆ Common property and open property differ in that, under the **common property**, the use of resource is restricted to defined individuals or groups whiles
- ◆ In the open property, resources are “free for all”
- ◆ Though in some cases, a group control may be exercised over areas previously subject to open access
- ◆ For example a hunting area may be taken over by a particular tribe.
- ◆ In this case hunting may be restricted to only members

Cont'd

- ◆ Common-property ownership are not necessarily incompatible with individual use.
- ◆ For example, the ownership of farmland may be vested in a group and the group leaders then allocate portions of the land to the various families and individuals.
- ◆ Under common property regime, land is usually not viewed as a commodity that can be sold on the market, but rather as an inheritance that should be passed on to future generations.

Cont'd

- ◆ However, it is possible to sell the land products on the market and the land can also be sold by the group to a private owner or purchaser.
- ◆ **Public land ownership:**
- ◆ In relation with the mgt of land, the basic premise is that the state has no useful or beneficial role in its management.
- ◆ Private market forces are better able to identify needs, remedies, and opportunities for investment and therefore satisfy social goals

Cont'd

- ◆ **Private-property resources:**
- ◆ Common property ownership has in most instances given way to those involving private ownership, individuals or companies.
- ◆ Under this type of ownership, control and access rights are vested in the private owner.
- ◆ Limitations on right to access the resources rest in their sole decisions.
- ◆ Since the concept of private ownership was strange and inconsistent to many people, particularly in the developing world, the significance of transfer of

Cont'd

- ◆ Ownership was not necessarily understood by all those involved in the common property use of the resources.
- ◆ Unlike the common-property resource land is usually viewed as a commodity that can be sold on the market, and not an inheritance that should be passed on to future generations.

Cont'd

- ◆ **State ownership:**
- ◆ The simple sequence of ownership regime begins with **open access** through **common property** then to **private ownership** and complicated by **state ownership**.
- ◆ However, state ownership can be established at various stages for various reasons.
- ◆ State ownership have been established through a lot of means since post independence.

Cont'd

- ◆ In one way, colonial powers and modern governments simply declare to themselves owners of the resource without regard to communal patterns and control by the indigenous people.
- ◆ Another means by which state ownership can be established is a response to dissatisfaction with the established private pattern of ownership.
- ◆ State ownership may also be established if private ownership proves unable to manage the resource in a sustainable manner.

The Tragedy Of The Commons

- ◆ **Introduction:**
- ◆ The “commons” is any resources which is shared by a group of people.
- ◆ Things like the air we breathe in and the water we drink come from the commons.
- ◆ The tragedy of the common is a metaphor popularized by Garrett Hardin in 1968 which he used to illustrate the conflict between individual interest and the common good.

Cont'd

- ◆ **What is the logic of the common?**
- ◆ The logic is as follows:
- ◆ Each household has the right to take resources from and put waste into the commons.
- ◆ To accumulate wealth, each household believes it can take one unit of resources or dump one unit of waste while distributing one unit of cost across all of the households with whom the commons is shared.
- ◆ Thereby the gain to the household appears large and the cost very small

Cont'd

- ◆ Note that some household accumulate wealth more rapidly than others and this in turn gives them the means to access even larger share of the commons.
- ◆ The fallacy in the logic of the commons is the failure to recognise that all households are attempting to do the same.
- ◆ Thus on the average, one unit of gain for a household actually produces a net one unit of cost for each household.

Cont'd

- ◆ However, selfish household accumulate wealth from the commons by acquiring more than their fair share of the resource and paying less than a fair share of the total cost.
- ◆ As a result, as population grows and greed becomes rampant, the commons collapses and ends in “the tragedy of the commons”(Garrett Hardin, Science 162:1243, 1968)

Cont'd

- ◆ **How does the commons work?**
- ◆ The logic of the common break down when resources decline and/or population becomes large.
- ◆ An apparent solution to avert the collapse of the commons was the introduction of private ownership
- ◆ However, private ownership did nothing to control greed.
- ◆ It merely shifted to a new arena; the number of landless households grew rapidly, each one descending deeper and deeper into abject poverty.

Cont'd

- ◆ **Why does the commons continue?**
- ◆ In many cases resources from these commons are no longer free for taking.
- ◆ Dumping our waste into commons is not free as it was. One must pay a fee or be licensed to get access.
- ◆ But all the same fisheries, wood, national parks, highways and many other resources are commons just the same.
- ◆ Access to them merely requires a desire to do so and the means.

Cont'd

- ◆ Population growth, greed and the logic of the commons have virtually destroyed the worlds ocean fisheries and the amazon rain forest.
- ◆ Huge tracks of land have given in to desertification.
- ◆ Although national negotiations on managing the global commons for a sustainable yield continue, progress towards resolution is nil.
- ◆ Without population growth control and greed, the logic of the common makes a global-wide tragedy of the commons inevitable

Agriculture And Food Security

- ◆ **Meaning and nature of agriculture:**
- ◆ Agriculture is rooted in the words- “ager” (field or soil) and “cultura” (the care of/the tilling of).
- ◆ That is the care of or the tilling of the soil.
- ◆ However, agriculture as we all know, goes beyond mere tilling of the soil or raising of field crops.
- ◆ It include such activities as rearing of animals, tree, fishing etc.
- ◆ But food production is the largest function of agriculture.

Cont'd

- ♦ **Agriculture's dependent on nature:**
- ♦ The major characteristic of agriculture is its dependent on **Nature**.
- ♦ Agriculture is heavily **dependent on the unpredictable and uncontrolled weather, on a thin sheet of soil that covers much of the earth's surface and on the biological rhythm and changes of plant and animal life.**
- ♦ The implications of this three-fold dependence are infinite.

Cont'd

- ◆ **Managing nature:**
- ◆ Over the years, man has made some attempt to control these elements with some little success.
- ◆ **Climate:**
- ◆ To some extent, man can fight sunshine, rain, temperature, wind and frost but not air masses because he cannot change the seasons
- ◆ **Soil:**
- ◆ Quite able to be altered by human influence than climate yet it took a long time to understand soil.

Cont'd

- ◆ **The life processes of plants and animals:**
here man has made great triumphant. The characteristics of plants and animals can be adapted to suit the needs and wishes of man.

Cont'd

- ◆ **Results of man's interference in Nature's Food Production:**
- ◆ Man has seriously impaired the agricultural productivity of nature in many parts of the earth:
- ◆ Examples: soil fertility have been ruins through various practices
- ◆ There have been damage to water supply
- ◆ Man has extinguished species of both plants and animals life.

Cont'd

- ◆ **Diversity of Agriculture:**
- ◆ Agriculture is not far from being a global activity than any other form of human activity.
- ◆ Simply because everybody must eat, and many of them raise most, if not all of what they eat.
- ◆ Many things combine to make agriculture the most diverse or heterogeneous enterprise of man.
- ◆ Examples include: rainfall and irrigation, extensive and intensive agriculture, labour intensive and capital intensive agriculture etc.

Cont'd

- ◆ **Rural Dev't, Agriculture and Food Security:**
- ◆ Fostering the growth of national and global food supplies is necessary for eliminating hunger and reducing poverty, but it is not enough.
- ◆ Even now, in the midst of sufficient global food supplies, millions of people are hungry because they cannot afford to buy.
- ◆ Even those who are able to buy are at risk of micronutrients deficiencies.

Cont'd

- ◆ Reducing poverty and hunger will require encouragement of rural development in general and promoting agriculture economy.
- ◆ Rural development can contribute significantly to improve the management of natural resources and the environment.

Cont'd

- ◆ **Assuring food security:**
- ◆ Assuring food security is large and complex.
- ◆ Action needs to be taken simultaneously at both the household, national and global levels to achieve the ff goals:
- ◆ Increase agriculture output worldwide
- ◆ Reduce poverty
- ◆ Improve health and nutrition.

The Dark Side of Natural Resources

- ◆ **Diamonds in conflict:**
- ◆ Diamonds have often been associated with violence and misery.
- ◆ The connection between diamonds and conflict goes far beyond rebel groups taking control of diamond-rich areas and selling the precious metal for arms and war supplies.
- ◆ Large diamond companies are now involved in this deadly game, along with traders, transport companies, arms smugglers and financial firms.

Cont'd

- ◆ Most of these conflicts occurred in the part of the continent where these precious metals were found.
- ◆ Countries like Angola, Sierra Leone and Liberia have experience civil wars which were fuelled by diamonds

Cont'd

- ◆ **Oil and Natural gas:**
- ◆ Oil extraction has also been known to be a source of violence, contrary to the conventional wisdom that oil fosters prosperity and development.
- ◆ Most of the time, petroleum producing countries are plagued by corrupt and authoritarian governments who seek to enrich their pockets with the revenue from these resources.
- ◆ In addition, our environment can also be damaged by the extraction of these resources.

Cont'd

- ◆ **Water:**
- ◆ Though water is a 'renewable' resource, population growth and growing consumption puts pressure on the world fresh water supplies.
- ◆ Water scarcity had led to conflicts in some parts of the world.
- ◆ As the demand for water hits the limits of finite supply, potential conflicts are brewing b/n nations that share boundary fresh water supplies.

Cont'd

- ◆ **Timber:**

- ◆ Rampant timber exploitation has not only destroyed the environment but also fuelled illegal arms deals and bloody civil wars and regional instability

- ◆ **Minerals:**

- ◆ In addition to diamonds, the mining of cobalt, coltan, copper and gold has also fuelled illegal arms deals by rebels who take control of the mining area, and bloody civil wars and regional instability